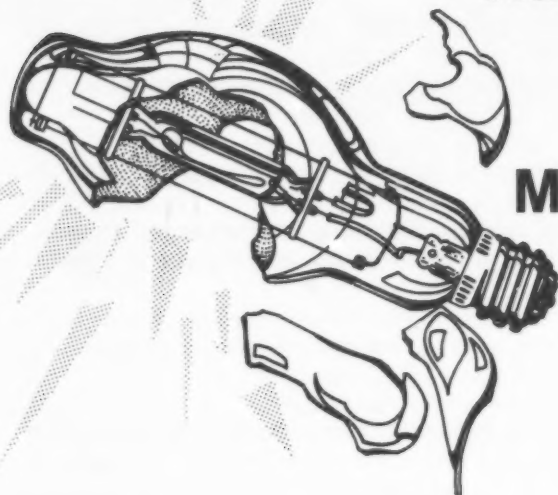


M53

Notice of Alert



Hazards from Broken Mercury Vapor and Metal Halide Lamps

NEWARK PUBLIC LIBRARY

NOV 10 1980

U. S. GOVT. PUBS.
DEPOSITORY 376

In November 1977 the Food and Drug Administration issued a Notice of Alert concerning possible hazards associated with broken mercury vapor lamps. The notice advised the use of lamps with an automatic shut-off device, or shielding, where people might be exposed to dangerous ultraviolet radiation if the outer globe of the lamp is broken. Reports of injuries continue to be reported to the Bureau of Radiological Health. We are concerned that the earlier alert may not have reached the individuals who could ensure that precautions are taken. PLEASE COMMUNICATE THIS INFORMATION TO OTHER PERSONS WHO MIGHT BE INTERESTED OR AFFECTED BY THIS HAZARD.

As is indicated in the earlier Notice of Alert, high intensity mercury vapor and metal halide lamps can be dangerous if they continue to operate when the outer globe of the lamp is broken, punctured, or missing. A broken outer globe allows the lamp to emit intense ultraviolet radiation. Persons exposed to excessive amounts of ultraviolet radiation can suffer severe skin burns and painful, potentially permanent eye damage. Injuries occurring in stores, sports arenas, warehouses, outdoor fairgrounds, and school gymnasiums have been, and continue to be, reported to the Bureau of Radiological Health. The following updated material has been prepared to advise you of the new regulation and to help you prevent injuries in your facility.

On September 7, 1979, the FDA issued a Performance Standard for High Intensity Mercury Vapor Discharge Lamps, including "mercury vapor" and "metal halide" lamps. Except for one small part, the Standard went into effect March 7, 1980. The Performance Standard issued by FDA allows the manufacture of two types of mercury vapor lamps. One type has a self-extinguishing device that will shut the lamp off within 15 minutes after the outer globe is broken. These lamps are marked "T."

HE 20.4102.

This label will appear on the packaging of self-extinguishing mercury vapor and metal halide lamps:

"This lamp should self-extinguish within 15 minutes after the outer envelope is broken or punctured. If such damage occurs, TURN OFF AND REMOVE LAMP to avoid possible injury from hazardous shortwave ultraviolet radiation."

NOTE THAT A "SELF-EXTINGUISHING" LAMP MAY TAKE AS LONG AS 15 MINUTES TO TURN OFF AFTER THE OUTER BULB HAS BEEN BROKEN. Therefore, if a lamp breaks, even if it is self-extinguishing, people should leave the area immediately.

The second type of mercury vapor lamp does not have a self-extinguishing device incorporated into the lamp. This type of lamp is to be used only in a fixture with a glass or plastic shield that will absorb the hazardous ultraviolet radiation, or in areas where people will not be exposed to ultraviolet radiation if the outer globe is broken. These lamps are marked "R."

This label must appear on the packaging and advertising for non-self-extinguishing mercury vapor and metal halide lamps:

"WARNING: This lamp can cause serious skin burns and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available."

If you plan to install mercury vapor or metal halide lamps in areas ordinarily occupied by people:

1. USE BULBS THAT HAVE SELF-EXTINGUISHING MECHANISMS. (A list of manufacturers presently marketing these bulbs is attached.)

OR

2. USE TOTALLY ENCLOSED LIGHTING FIXTURES WITH PROTECTIVE SHIELDS THAT PROTECT THE LAMP FROM DAMAGE AND ABSORB ULTRAVIOLET RADIATION. (Shielding is available for most fixtures.)

PLEASE DISTRIBUTE COPIES OF THE ATTACHED FLYER AND FACT SHEET TO MAINTENANCE AND OTHER PERSONNEL INVOLVED IN THE USE OF FACILITIES EQUIPPED WITH SUCH LAMPS. An attempt should be made to ensure that they understand the need for concern. Periodic checks for broken or missing outer bulbs

--with the lamps turned off--should be a part of the regular maintenance program. People occupying areas lighted by high intensity discharge lamps should be advised to:

1. be alert for signs of damaged bulbs, such as broken glass on the floor;
2. alert the proper personnel to turn off a lamp with a broken outer bulb immediately;
3. vacate the area lighted by a lamp with a broken outer bulb;
4. be aware of the symptoms of injury from ultraviolet radiation exposure (i.e., skin burns and eye irritation) so that anybody who is injured can tell a doctor that the injury may be associated with exposure to ultraviolet radiation, and;
5. report any injuries to the State health department and to the Food and Drug Administration's Bureau of Radiological Health.

If you would like additional free copies of the flyer or Notice of Alert, write to:

Bureau of Radiological Health
Food and Drug Administration (HFX-28)
Rockville, Maryland 20857

Included is a list of questions that are frequently asked about possible radiation hazards from broken mercury vapor and metal halide lamps, along with our replies. If you have further questions or wish to comment concerning this matter, write to:

Bureau of Radiological Health (HFX-460)
Food and Drug Administration
Rockville, Maryland 20857

Fact Sheet on Mercury Vapor and Metal Halide Lamps

1. Q: To what kind of high intensity discharge lamps does the standard apply?

A: The standard is intended to apply to lamps, including "mercury vapor" and "metal halide," that incorporate a high pressure arc discharge tube, with a fill consisting primarily of mercury, contained within an outer envelope and which is designed, intended, or promoted for illumination purposes. The standard does not apply to high pressure sodium lamps, fluorescent lamps nor to blacklights, because available information does not indicate a public health risk in the use of such products at this time.

2. Q: Who manufactures self-extinguishing lamps?

A: Based upon information currently available to FDA, manufacturers of mercury vapor lamps with a self-extinguishing feature are listed in alphabetical order below. This listing does not imply an endorsement by FDA of products manufactured by these companies:

1. Duro-Test Corporation
North Bergen, New Jersey 07047
2. General Electric Company
Edison Park
8499 Darrow Road
Twinsburg, Ohio 44087
3. GTE - Sylvania
100 Endicott Street
Danvers, Massachusetts 01923
4. North American Philips Lighting Corp.
Heightstown, New Jersey 08520
5. Westinghouse Electric Corporation
One Westinghouse Plaza
Bloomfield, New Jersey 07003

For further information concerning the lamps, please contact the companies at the above addresses.

3. Q: Must all high intensity lamps used in areas where people gather be self-extinguishing?

A: No. As discussed in the Notice of Alert, a shield over the lamp and fixture (luminaire), in some cases, may prevent damage to mercury vapor lamps not equipped with a self-extinguishing feature, and thereby may preclude injuries. Such shields should protect against and also absorb ultraviolet radiation if the lamp were to break or become defective within the shielded fixture. This shielding alternative can be used in place of self-extinguishing lamps.

FDA is unable to provide specific data on available shields for each type of lamp or fixture (luminaires). For further information on shields for lamps of interest, we suggest you contact the supplier of the lamp or fixture (luminaire).

4. Q: What factors are important in determining the relative dangers associated with the use of these lamps?

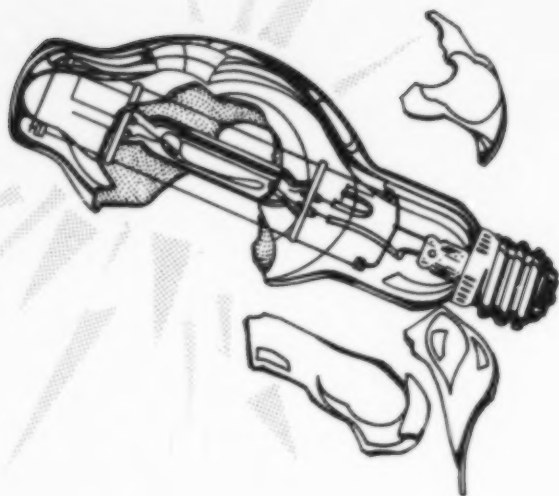
A: The relative dangers posed by a broken mercury lamp vary with each application and depend upon a number of factors including the wattage of the lamp (the more wattage, the more dangerous it is if it is broken), the mounting height (the higher the lamp, the less danger), the type of luminaire used (a luminaire may reduce chances of breakage), and the likely duration of exposure (the longer the exposure, the more chance of injury). All these factors should be carefully considered in designing a lighting installation.

Based on the limited experience with lamp use and injury reports, it is suggested that as a general rule only self-extinguishing lamps (T types) or shielded non-self-extinguishing lamps (R types) be used in areas where people may remain for more than 15 minutes. Such areas include, but are not limited to, gymnasiums and other indoor areas and outdoor lighted areas where people tend to gather or linger such as building entrances, school parking lots, fairgrounds, sports areas, and certain residential streets. Injuries from broken mercury vapor lamps have been known to occur in some of these areas. Areas where unshielded "R" type lamps may be used safely include highways and other nonresidential roadways and indoor areas having controlled, limited access which are occupied for only short periods of time.

Caution should be used, however in applying the preceding guidance and a decision to use an unshielded "R" type lamp should be made only after carefully weighing all of the relevant factors. If there is any doubt about the type of lamp that should be used, then use a "T" type lamp or a shielded "R" type.

Detach this warning poster and
post it where it can be easily seen
by employees .





Broken Mercury Vapor and Metal Halide Lamps can be Dangerous

High intensity discharge lamps which continue to work after their outer bulbs are damaged give off hazardous ultraviolet radiation. This radiation is invisible, but can cause severe skin burns and eye damage. Extensive or repeated exposure could increase the risk of skin cancer.

- **CHECK THE LAMPS REGULARLY FOR MISSING, BROKEN OR PUNCTURED OUTER BULBS.**
This should be done with the lamps off.
- **IF A LAMP IS BROKEN, TURN THE LAMP OFF IMMEDIATELY.**
- **REPLACE LAMPS ONLY WHEN THE LAMPS ARE OFF.**
- **PERSONS EXPOSED TO ULTRAVIOLET RADIATION FROM A DAMAGED LAMP SHOULD SEE A DOCTOR IF SYMPTOMS OF SKIN BURNS OR EYE IRRITATION OCCUR.**
- **REPORT INCIDENTS OF INJURIES TO YOUR STATE HEALTH DEPARTMENT AND TO THE FOOD AND DRUG ADMINISTRATION.**

For more information, write to: U.S. Dept. of Health and Human Services,
Food and Drug Administration, Bureau of Radiological Health,
Rockville, Maryland 20857

HHS Publication No. (FDA) 80-8135

1 STT

DEPARTMENT OF
HEALTH, AND HUMAN SERVICES
Public Health Service
Food and Drug Administration
Rockville, Maryland 20857

Official Business

Postage & Fees Paid
PHS
Permit No. G 29

THIRD CLASS BULK RATE